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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/701,496

11/06/2003

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Q78309

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EXAMINER

DESAI, ANISH P

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

04/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/701,496 | TOSAKI ET AL. | |
| | Examiner | Art Unit | |
| | ANISH DESAI | 1794 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action replaces the Office Action that was mailed on 02/04/08. On 03/04/08, Applicant's attorney Mr. Mike Raucci informed the Examiner that claim 5 was not addressed in the Office Action mailed on 02/04/08. This Office Action addresses claim 5. The Examiner apologizes for any inconvenience that may have caused.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed on 09/17/07 after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/17/07 has been entered.
3. Claims 1-7 are pending. Support for amended claim is found in the specification.
4. The 35 USC Section 102(b) rejections based on Cooprider et al. (US 5,571,617) are withdrawn in view of the present amendment and response. Cooprider does not anticipate "in a surface portion of the pressure-sensitive adhesive layer...an anionic emulsifier containing sulfur atom...0.1 to 3 parts by weight based on 100 parts by weight of the whole of the monomer components constituting the acrylic polymer" as claimed. However, upon further consideration a new 35 USC Section 103(a) rejection based on Cooprider et al. (US 5,571,617) is made.
5. A new 35 USC Section 103(a) rejection based on Michio et al. (EP 0661302A1) in view of Tran et al. (US 6,103,316) is made.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 1 recites "A pressure-sensitive adhesive tape or sheet...(A) an acrylic polymer containing a (meth) acrylic acid...;and in a surface portion of the pressure-sensitive adhesive layer within the range of up to 3 nm inward from the outer face of the...,(B) an anionic emulsifier containing a sulfur atom is contained....whole of the monomer constituting...acrylic polymer (A)....adhesive layer...wherein the hydrophilic polymer is added...acrylic polymer.". Note the recitation "and in a surface portion of the pressure sensitive adhesive layer within the range on up to 3 nm inward from the outer face of the pressure-sensitive adhesive layer" is confusing because it is not clear as to whether this recitation refers to the acrylic polymer or anionic emulsifier. For the purpose of the examination, it is interpreted that the anionic emulsifier is contained in the surface portion of the PSA within the range of up to 3 nm inward from the outer surface of the PSA; wherein the proportion of the emulsifier is from 0.1 to 3 parts by weight based on 100 parts by weight of the whole monomer constituting the acrylic polymer (A).

8. Further, Applicant is respectfully requested to explain how he/she controls the proportion of the anionic emulsifier in a surface portion of the PSA layer as claimed. If Applicant would refer to specific areas in the specification where controlling the location of the emulsifier is

disclosed, then this would assist the Examiner in further understanding of the claimed invention with regards to the novelty and nonobviousness.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 4, 6, and 7 are rejected under 35 U.S.C. 103 (a) as obvious over Coopridner et al. (US 5,571,617).

10. Regarding claims 1 and 6, Coopridner discloses a coated sheet material comprising a backing and a coating of repositionable PSA (abstract). Further, aqueous dispersion based PSA of Coopridner comprises (A) plurality of polymeric, solid elastomeric microspheres that are reaction product of reactants comprising at least one C4-C14 alkyl (meth)acrylate monomer and at least one comonomer (acrylic polymer containing a (meth)acrylic acid C4-C12 alkyl ester) (column 1 lines 45-56 and column 4 lines 1-65), (B) anionic surfactant (emuslifier) containing sulfur atom (e.g. sodium lauryl sulfate at column 6 line 39), and (C) a polymeric stabilizer such as salts of polyacrylic acid (reads on hydrophilic polymer such as poly(meth) acrylic acid)

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(column 5 lines 60-65 to column 6 lines 1-11). The polymeric stabilizer (hydrophilic polymer) of Cooprider is present in the reaction mixture in an amount by weight of about 0.1 to 3 parts by weight per 100 parts of polymerizable monomer (column 6 lines 12-20). Further, the surfactant is present in the amount by weight of no greater than 5 parts by weight per 100 parts by weight of polymerizable monomer, preferably no greater than 3 parts by weight, and most preferably in the range of 0.1 to 5 parts by weight per 100 parts by weight of polymerizable monomer (column 6 lines 21-30). This disclosure of Cooprider together with disclosure of use of sulfur containing surfactants such as sodium lauryl sulfate at column 6 line 39, reads on "the anionic emulsifier (B) containing sulfur atom in a proportion of from 3 to 5 parts by weight per 100 parts by weight of the whole of the monomer components constituting the acrylic polymer (A)" as required by claim 6.

11. As to the claim requirement of the anionic emulsifier is contained in the surface portion of the PSA within the range of up to 3 nm inward from the outer surface of the PSA; wherein the proportion of the anionic emulsifier is from 0.1 to 3 parts by weight based on 100 parts by weight of the whole monomer constituting the acrylic polymer (A), it is noted that the aqueous dispersion type PSA composition of Cooprider has very little coagulum (see column 9 line 46). In other words, it is the finely dispersed PSA composition that is obtained. Since, each component in the composition including the anionic emulsifier containing sulfur is dispersed finely, the amount of each component in the resultant PSA should be uniform, and the PSA sheet formed by the reference should comprise the same ratio of the anionic emulsifier containing a sulfur atom in the surface portion of the PSA layer.

12. As to the claim requirement of "wherein the hydrophilic polymer is added as an aqueous solution after the polymerization of the acrylic polymer" is considered to be product by process limitation. Product by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir.1985). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). It is noted that the reference of Coopridier discloses addition of a polymeric stabilizer (hydrophilic polymer), but does not specify that the stabilizer is added after the polymerization of the acrylic polymer. However, the Examiner sees no factual evidence on the record that demonstrates that the aforementioned process step materially affects the structure and/or chemistry of the final product (i.e. adhesive tape). To the Examiner the structure and the composition of the final products (i.e. PSA tape) of Coopridier and that of Applicant are similar. Regarding claim 4, this claim further defines the ratio of elemental sulfur present by the ESCA measurement in the surface portion of the psa layer. Although the reference does not disclose the parameter, the physicochemical parameters of the same products should be fixed, and accordingly since claim 1 is obvious, neither is claim 4. With regard to claim 7, it

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would have been obvious to one having ordinary skill in the art at the time the invention was made to use porous substrate, motivated by the desire to form suitable PSA tape.

13. Claims 1-5, 6, and 7 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tosaki et al. (EP 1340797A2).

14. Tosaki discloses an adhesive tape comprising a porous base material (0037) and an aqueous dispersion type PSA composition coated onto the base material (abstract). The PSA composition of Tosaki comprises (A) acrylic polymer comprising as the main monomer units, units derived from at least one C4-12 alkyl ester of (meth) acrylic acid (0008), (B) an emulsifying agent such as anionic emulsifying agents for example sodium lauryl sulfate in the amount of 0.5 parts by weight or larger, more preferably 1.0 parts by weight or larger, per 100 parts by weight of the monomer components (0021), and (C) at least one hydrophilic polymer such as polyvinylpyrrolidone in the amount of from 0.5 to 15 parts by weight per 100 parts by weight, on a solid basis, of the acrylic based adhesive composition (abstract). Further, Tosaki discloses that it is preferred to add a hydrophilic polymer in the form of an aqueous solution after the polymerization for acrylic polymer production.

15. Tosaki is silent with respect to teaching the anionic emulsifier is contained in the surface portion of the PSA within the range of up to 3 nm inward from the outer surface of the PSA; wherein the proportion of the anionic emulsifier is from 0.1 to 3 parts by weight based on 100 parts by weight of the whole monomer constituting the acrylic polymer (A), and wherein the surface portion of the PSA layer within the range of up to 3 nm...by the ESCA measurement is less than 1 atomic%. However, it is reasonable to presume that this feature is present in the

invention of Tosaki. The support for said presumption is based on the fact that the adhesive tapes of Tosaki and that of Applicant comprise same structure and composition. Therefore, aforementioned claimed features would be present in the invention of Tosaki. The burden is shifted to Applicant to prove it otherwise (*In re Fitzgerald*, 205 USPQ 594).

16. Regarding claim 5, it is noted that while claim recites "multilayered" PSA, it does not require that each layer of the multilayered PSA be separate and distinguishable from each other. Moreover, claim language does not preclude the presence of the anionic emulsifier (B) in other layers of the multilayered PSA. Therefore, a single layer of PSA that is applied onto a substrate can be interpreted as "multilayered" PSA. The reference of Tosaki discloses such a single PSA layer that includes an emulsifying agent (B) such as anionic emulsifying agents for example sodium lauryl sulfate in the amount of 0.5 parts by weight or larger, more preferably 1.0 parts by weight or larger, per 100 parts by weight of the monomer components (0021).

Additionally the thickness of the PSA layer of Tosaki is from 5 to 300 micrometer (0041). Thus, to the Examiner the PSA layer of Tosaki having the anionic emulsifier such as sodium lauryl sulfate in the amount of 0.5 parts by weight or larger based on 100 parts by weight of the monomer components (acrylic) will read on the presence of the anionic emulsifier in the outermost layer of the multilayered PSA in the amount as required by the presently claimed invention. Moreover, with regards to the claim requirement of "the multilayered pressure-sensitive adhesive layer, as a whole, contains (i) anionic emulsifier (B) containing a sulfur atom in a...and (ii) hydrophilic polymer (C)...adhesive layer", the same reasoning as set forth with respect to the presence of anionic emulsifier in the outermost layer of the multilayered PSA applies. Specifically, Tosaki discloses a single PSA layer that includes an emulsifying agent (B)

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such as anionic emulsifying agents for example sodium lauryl sulfate in the amount of 0.5 parts by weight or larger, more preferably 1.0 parts by weight or larger, per 100 parts by weight of the monomer components (0021). Further, Tosaki discloses hydrophilic polymer such as polyvinylpyrrolidone in the amount of from 0.5 to 15 parts by weight per 100 parts by weight, on a solid basis, of the acrylic based adhesive composition (abstract). This disclosure of Tosaki meets the claim requirement of claim 5.

17. Claims 1-5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michio et al. (EP 0661302A1) in view of Tran et al. (US 6,103,316).

18. Michio discloses a process for producing an aqueous dispersion type acrylic polymer which comprises introducing a monomer comprising an alkyl (meth) acrylate as the main component into a polymerization vessel (abstract), wherein the alkyl (meth) acrylate has preferably 1 to 18 carbons (page 3 lines 44-46). Further, Michio discloses pressure sensitive adhesive covered product (PSA tape) wherein the PSA coating is applied onto a sheet like product such as tile carpet (page 5 lines 12-23). Further, the PSA of Michio comprises (B) emulsifying agent such as anionic emulsifier for example polyoxyethylene alkylphenyl ethers and suitable sulfate salts thereof (page 3 lines 55-57 to page 4 lines 1-5). According to Michio “The amount of emulsifying agent used is not particularly limited, but it is usually from 0.5 to 5 parts by weight per 100 parts by weight of the monomer.” (page 4 lines 1-5).

19. Michio is silent as to teaching of anionic emulsifier is contained in the surface portion of the PSA within the range of up to 3 nm inward from the outer surface of the PSA; wherein the proportion of the anionic emulsifier is from 0.1 to 3 parts by weight based on 100 parts by weight of the whole monomer constituting the acrylic polymer (A) (claims 1 and 6), at least one

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hydrophilic polymer as claimed in claim 1, claim limitation of claim 4, and claim limitation of claim 5, and claim limitation of 7. However, Tran discloses method of making electron beam polymerized emulsion based acrylate PSA. Further, the emulsion based acrylate PSA of Tran includes one or more acrylate monomers, one of more free-radically copolymerizable monomers, and surfactant or polymeric suspending agents (column 2 lines 30-40). Additionally, Tran discloses "Polymeric suspending agents [hydrophilic polymer] may also be used in the precursor emulsions, either alone or in combination with surfactants, to stabilize the precursor emulsions. Suitable polymeric suspending agents are those conventionally used in emulsion polymerization process and include, for example, water-soluble organic suspending agents such as polyacrylic acid and polyvinyl alcohol. The suspending agent may be present in the amounts ranging from about 0.01 parts to about 5 parts based on 100 parts by weight of the reactive materials." (column 8 lines 48-57). It is noted that the primary reference of Michio's adhesive is emulsion polymerized and it includes acrylate polymer and surfactants. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the hydrophilic polymer (polymeric suspending agents) of Tran in the PSA composition of Michio, motivated by the desire to stabilize the emulsion. As to the claim requirement of "wherein the hydrophilic polymer is added as an aqueous...after the polymerization of the acrylic polymer" as stated previously, this limitation is related to product by process limitation.

20. With respect to claim requirement of Michio is silent as to teaching of anionic emulsifier is contained in the surface portion of the PSA within the range of up to 3 nm inward from the outer surface of the PSA; wherein the proportion of the anionic emulsifier is from 0.1 to 3 parts by weight based on 100 parts by weight of the whole monomer constituting the acrylic polymer

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(A) (claims 1 and 6), and claim limitation of claim 4, it would be reasonable to presume that said features are present in the invention of Michio as modified by Tran. Support for said presumption is based on the fact that the PSA tapes of Michio as modified by Tran, and that of Applicant comprise components (A), (B), and (C). Therefore, the presently claimed feature would be present.

21. Regarding claim 5, as set forth previously the recitation of “multilayered” PSA does not require that each PSA layer of the “multilayered” PSA be separate and distinguishable from each other, and the claim language does not preclude the presence of the anionic emulsifier (B) in other layers of the multilayered PSA. Thus, a single PSA layer of the prior art is interpreted as capable of reading on the “multilayered” PSA as presently claimed. Michio’s invention discloses such a single PSA layer. Further, the PSA of Michio comprises (B) emulsifying agent such as anionic emulsifier for example polyoxyethylene alkylphenyl ethers and suitable sulfate salts thereof (page 3 lines 55-57 to page 4 lines 1-5). According to Michio “The amount of emulsifying agent used is not particularly limited, but it is usually from 0.5 to 5 parts by weight per 100 parts by weight of the monomer.” (page 4 lines 1-5). This disclosure of Michio reads on the outermost layer of the multilayered PSA containing the anionic emulsifier (B) in the proportion as claimed by claim 5 and the multilayered PSA as a whole contains (i) the anionic emulsifier (B) in the proportion as claimed by claim 5. As to the claim 5 requirement of the presence of the hydrophilic polymer (C), it is noted that Michio is silent as to teaching of the hydrophilic polymer, however as stated previously Tran is relied upon to teach this limitation. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention

was made to add the hydrophilic polymer (polymeric suspending agents) of Tran in the PSA composition of Michio, motivated by the desire to stabilize the emulsion.

22. As to claim 7, Tran discloses substrate made of woven fabric formed of cotton (column 11 lines 20-22), which reads on the porous substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the porous substrate of Tran in the invention of Michio, motivated by the desire to form a PSA tape.

Response to Arguments

23. Applicant's arguments filed 09/17/07 have been fully considered but they are not persuasive.

24. It is noted that Applicant has continued to maintain his/her argument with respect to the previous Examiner's rejection of claims based on Coopridner et al. (US 5,571,617). Applicant has further provided supplemental declaration by Mr. Yutaka Tokashi.

25. The declaration by Mr. Tokashi and arguments based on the declaration are not found persuasive for the following reasons. The declaration fails to accurately duplicate Example 8 of Coopridner because molecular weight of polyacrylic acid used in the declaration and Example 8 of Coopridner are not the same. As previously noted, the polyacrylic acid of Example 8 of Coopridner is 190,000. It is noted that in the declaration Mr. Tosaki has attempted to duplicate Example 8 of Coopridner using polyacrylic acid of MW 150,000 and MW of 250,000 (everything else being same); calculated the weight% of the anionic emulsifier within the range of up to 3 nm inward from the outer surface of the, and shown that the weight% of the anionic emulsifier is outside the claimed range. However, it is not clear if a linear interpolation of the weight% of anionic emulsifier for Example 8 of Coopridner based on Examples in the declaration that uses

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polyacrylic acid of MW 150,000 and 250,000 is proper. With only 2 data points, one does not know whether the relationship is linear, a curve or function. Further, the declaration also makes assumptions such as “uniform distribution of elements” in calculation of the ratio of sulfur element (see page 6 of the declaration filled on 07/13/07). It is not clear as to what extent this assumption is true. Additionally, there is no evidence on the record that the FINAL performance characteristics (i.e. bond strength) of the tapes of Coopridier and that of Applicant are any different. If the location of the emulsifier affects performance, one should be able to observe this difference in performance by simple comparison. As to the claim limitation of addition of hydrophilic polymer after the polymerization of acrylic acid, the declaration states that the addition of hydrophilic polymer after the polymerization of acrylic acid allows hydrophilic polymer to be dispersed in lump state in the PSA (unlike in Coopridier). Further, the declaration states that the dispersed lump state causes excellent initial adhesion to the dewing surface or wet surface, which is the effect of the present tape or sheets. This is not found persuasive because the aforementioned statement of the declaration is not commensurate in scope with the claimed invention. Specifically, the effects (e.g. excellent initial adhesion to the dewing surface or wet surface) as asserted in the declaration are not claimed. Accordingly the supplemental declaration is not found persuasive.

Conclusion

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH DESAI whose telephone number is (571)272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. D./

Examiner, Art Unit 1794

APD

/Terrel Morris/

Terrel Morris

Supervisory Patent Examiner

Group Art Unit 1794